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MENIA HANGING-BRIDGE.

Scientific Notices.

A Description, illustrated by an Engraving, of the IRON HANGING-BRIDGE, *ordered to be erected over the* MENAI STRAIT, *(which separates the Isle of Anglesea from Carnarvonshire) upon the plan, and under the direction of* THOMAS TELFORD, *Esq. F. R. S. E. &c. together with the Calculations of the Stress and Strength of the said Bridge; and likewise some Account of the Experiments made by Mr Telford, and others, to ascertain the Strength of Iron, with a view to acquire correct data for the construction of an Iron Hanging-Bridge over the River Mersey, at Runcorn, in Cheshire, all of which are equally applicable to the Menai Bridge.*

Since the union of Ireland with Great Britain, it has more than ever been an object with Government to facilitate the intercourse between the capitals of the two countries. Accordingly, in the year 1810, the House of Commons appointed a Select Committee "to inquire into the state of the roads from Holyhead to London, into the regulations for the conveyance of his Majesty's mail between London and Dublin; and also into the laws and regulations relating to the conveyance of passengers, goods, and merchandize, between Dublin and Holyhead." This Committee, having sat at different times, has made several Reports, in which they have recommended various measures for improving the roads in this great line of communication, many of which are now in progress. But, in regard to expedition, it would have been of little avail to have improved the roads, without remedying the delay, the inconvenience, and the danger, frequently experienced in crossing the Menai Strait, which separates the Isle of Anglesea from Carnarvonshire.

In the years 1810 and 1811, several plans of bridges were proposed for effecting a regular and unobstructed passage, in the place of the present ferry at Bangor. All these bridges were to be of cast iron, and of sufficient width of span and height of elevation not to obstruct the navigation. Among those approved by the Committee of the House of Commons, after due investigation, was one of a single arch, of cast iron, of 500 feet span, and 100 feet above the level of high water in the middle of the arch, projected by Mr. Telford. Although the least expensive of any cast iron bridge of those dimensions, the estimated cost of this bridge was upwards of £127,000. But the construction of such a bridge presented a great difficulty in the fixing of proper centering, which could not be accomplished by ordinary means from below, owing to the rocky bottom of the channel, and the depth and rapidity of the tide way. Mr. Telford was, therefore, led to devise a new mode of suspending the centering from above, and furnished a design for this purpose.

In 1814, he was applied to for a design for a bridge to cross the river Mersey at Runcorn, in Cheshire, where it was necessary to preserve an uninterrupted waterway of 1000 feet; when a bridge upon the principle of suspension occurred to him as the only practicable means; and, with that view, he instituted a regular set of experiments upon rods of malleable iron, viz. from thirty to nine hundred feet in length, and from one-twentieth of an inch to two inches in diameter, and these both in regard to cementary parts, and also when combined, partly by welding, and partly by jointing in a model. From the result of these experiments, there was reason to conclude that, by means of malleable iron, properly combined, a substantial *hanging-bridge*, with a clear water-way on 1000 feet, might be constructed; and Mr. Telford accordingly gave to the Runcorn Bridge Committee a design for that purpose.

The facility and economy with which a bridge of this kind may be constructed, where the shores are bold and high, led Mr. Telford to consider it as peculiarly well adapted for crossing the Menai Strait, a little to the westward of Bangor Ferry. He therefore drew a plan upon this principle, for the consideration of the commissioners for the improvement of the Holyhead road. Before they recommended to Parliament the execution of this plan, they called before them, and examined, Mr. Donkin, Mr. W. Chapman, and Mr. Rennie, civil engineers, Mr. Brunton, of the firm of Brunton and Co. iron cable manufacturers, together with Mr. P. Barlow, of the Royal Military Academy at Woolwich, who had made experiments and calculations, and published a treatise, on the strength of materials. Reference too was made to the Elder Brethren of the Trinity House, who replied, that the construction of such a bridge, upon the plan, and in the situation proposed, could not be attended with any injurious consequences to the navigation of the Menai. The Report of the Commissioners being then made to Parliament, and the necessary funds granted, in July, 1818, directions were given for the commencement of the work, at a place called *Ynys-y-moch*, on the Anglesea shore.

The *iron hanging-bridge* to be constructed over the Menai Strait, is to consist of one opening of 560 feet between the points of suspension, and 100 feet in height between the high-water line and the lower side of the road-way; and the road-way being horizontal, this height is uninterrupted for the whole 560 feet, except where the natural rock, which forms the western abutment, now interposes. But, in addition to these 560 feet, there are to be four arches on the western, and three on the eastern side of the main opening, each fifty feet span, that is, making in all 850 feet of opening. The three arches on the Carnarvanshire side are shown in the annexed drawing: the four on the Anglesea side are exactly similar. The drawing also shows, that in regard to the navigation, it is far preferable to any bridge of an arched form, because the latter affords the full height of 100 feet only in the middle; whereas the former, as has just been observed, affords the same full height for the whole of the 500 feet, which will be a considerable advantage to vessels passing the Menai Strait, as it will allow them to stand closer to either shore while passing under the bridge. In regard to economy, this bridge, on the principle of suspension, has equally the advantage, the estimated expense not being more than £70,000; whereas the cheapest of the arched form, made of cast iron, would have cost nearly double that sum.

With respect to the facility of execution, it must be evident to any person the least conversant with mechanical operations, that the bridge-part of the large opening in the drawing, may be constructed nearly as readily as the centering only for a bridge of a single arch of cast iron of the same span.

The road-way will consist of two carriage-ways, each twelve feet in breadth, with a foot-path of four feet between them, so that the platform will be about thirty feet in breadth. The whole is to be suspended from four lines of strong iron cables by perpendicular iron rods, placed five feet apart, and these rods will support the road-way framing. The suspending power is calculated at 2016 tons, and the weight to be suspended, exclusive of the cables, is 342 tons, leaving a disposable power of 1674 tons. The four sides of the road-ways will be made of framed iron-work, firmly bound together for seven feet in height, and there will be similar work for five feet in depth below the cables. The weight of the whole bridge between the points of suspension will be 489 tons.

It is calculated that the contraction and expansion of the iron cables may occasion a rise or fall to the extent of four or five inches; but the variations of the temperature of the atmosphere will not derange the bridge.

The abutments will consist of the masonry-work, as it is represented in the drawing, with the addition of a fourth arch on the Anglesea side; each of the two piers will be 60 feet by 42½ wide at high-water mark, having a foundation of rock. These piers, when connected with the whole of the remainder of the masonry, will form a mass constructed with blocks of hard lime stone, of much greater weight than is necessary for supporting a bridge of this kind. Upon the summit of the two main piers will be erected a frame of cast iron, of a pyramidal form, for the purpose of raising the cables from which the bridge is to be suspended. As the cables will be carried from the top of the pyramids so as to form nearly similar angles on each side, the pressure will be almost perpendicular.

Mr. Telford proposes to have four lines of suspension in the breadth of the bridge, by which means the cables will be disposed in such a manner as to divide it (as before stated) into two carriage-ways of twelve feet each, with a foot-way of four feet in the centre. Along each line there will be four cables, making in the whole sixteen; these cables will pass over rollers fixed on the summits of the pyramids, and be fastened at their extremities to an iron frame, lying horizontally over the top of the small arches, and under a mass of masonry, as described by the *dotted lines* in the annexed drawing. From these cables the road-way will be suspended by vertical iron rods, connected at their lower extremities with wrought iron bars, both transeversely and longitudinally, thus forming a frame on which timber will be laid for the road-way. The distance of five feet is kept between the rods, in order that the suspending power may be equally distributed throughout the whole length of the bridge. The suspending rods will pass between the cables, and depend upon each two of them, so that the general strength of the bridge could not materially be affected by taking one away. The cables and the flooring, as well as the suspending rods, will be constructed and united in such a manner, that each of the parts may be taken out and replaced separately; so that there can be no difficulty in repairing any part of the bridge, whenever required. A temporary wire-bridge will be made from one abutment to the other, in order to carry over the cables, and arrange the several parts of the bridge, while building.

Mr. Barlow (in his calculation of the stress and strength of the projected *iron hanging-bridge* over the Menai Strait) begins by observing, that "one of the most important *data*, connected with this calculation, is the strength of direct cohesion of malleable iron. It appears, (says he) from the result of various experiments, performed by Mr. Telford and others, by Messrs. Brunton and Co. and also by Capt. Brown, at the latter of which I was present, that the medium ultimate strength of this metal is about 27 tons to the square inch section, and the strength, within certain limits, is proportional to the area. Mr. Brunton's machine appears to me to over-rate its own action; that of Capt. Brown, to register less than its full power.* According to the former course of experiments, the strength, on a square inch section, is 29¼ tons, while the latter gives only 25 tons. I assume the mean of these two as the medium strength; viz. 27 tons to the square inch. The bars on which these experiments were performed, varied from less than an inch to more than two inches in diameter. This *datum* being established, Mr. Telford was next desirous of ascertaining the strength of iron, when suspended, at its extremities, loaded with weights in different parts of its length, the results of which experiments he supplied me with for my publication on the strength of wood and iron. They appear to me to have been made with great care and accuracy. I have computed theoretically what weight ought to have been expected to produce the fracture; and the agreement between the theory and the practice was very remarkable; in some cases, the difference was not *one part out of one hundred* of the actual weight. It is this agreement which leads me to place entire confidence in the computations I have made relative to the Runcorn bridge, and also in the following, with respect to that proposed to be thrown across the Menai Strait.

"The length or distance between the piers of the Menai Bridge is proposed to be 500 feet, and the greatest deflection 30 feet, which will require the length of the cable or bar to be 505 feet, and the weight of 505 of a square inch rod will be about 1,704lbs. which will produce a strain on each point of suspension of 8,632lbs. The strain necessary to produce a fracture on the same rod, is 27 tons, or 60,480lbs. Such a bar would, therefore, bear a load, (including its own weight) of 28,372lbs. to be uniformly distributed over it, before a fracture would take place. This weight, multiplied by the number of square inches in the section of all the bars, will give the extreme weight the bridge would support, or rather the least weight that would break it.

"I believe it is intended to have four cables, each of 15 inches area, or 60 inches section in the four; therefore 28,372×60=17,023,200lbs. or 760 tons, is the whole weight the bridge would be just able to support.

"Mr. Telford estimating the whole weight of the Runcorn bridge (independent of any passing load) at 574 tons, there will remain a surplus strength of 473 tons; but this may be increased *ad libitum*, by increasing either the number of bars, or the section of each. If, therefore, the bridge be erected agreeably to the proposed plan, I am confident, as far as the strength of materials is concerned, no danger is to be apprehended. With regard to the strain and pressure on the top of the piers, I have made the following computations:—The tension being assumed equal to 380 tons, the vertical pressure is found to be equal to 89 tons, (viz. 380 × sin. 13° 34′) as arising from the centre catenary; and to estimate that part of the cable which passes over the piers, and serves as a brace, will adjust itself I about an angle of 20° with the horizontal line passing over the pier. The vertical pressure arising from this brace is, therefore, about 380 × sin. 20° =130 tons; and the whole vertical pressure on each pier will be 210 tons. I conceive (adds Mr. Barlow) that there will be no difficulty in finding materials to resist this pressure.

"The horizontal strain on the piers inwards is 38 × cos 13° 34′=369 tons, and outwards it is 380 × cos 20°=356 tons; there will, therefore, be a horizontal force acting inward on each pier equal to about 13 tons; this strain Mr. Telford proposes to counteract by the two pier braces, which will obviously be amply sufficient for the purpose. The weight of masonry above the bed to which the cables are ultimately attached, ought to exceed as much as possible 130 tons; with less weight they would give way. In conclusion, I beg to state, that I am not competent to judge of the practicability of the construction of this bridge; but, supposing it erected, I am convinced, from the above computation, that, as far as strength is concerned, no danger whatever need be apprehended."

Although from the evidence taken upon this subject in 1818, the concurrence was general as to the practicability of the plan, yet, in the particular discussions, inaccurate *data* having been assumed, when the Select Committee (appointed soon after the meeting of the new Parliament in 1819, to inquire into the state of the Holyhead roads, &c.) met

on the 24th of April last, to examine the severa papers referred to them relating to the Menai bridge; Mr. Telford, in order to facilitate further inquiry, delivered to Committee some important observations in writing from which we have taken the following interesting extract :—

"The distance between the points of suspension is 550 feet, and the versed sine is 37 feet, or about 1-15 h of the chord line.

"By calculation, I find that the weight to be suspended is 342 tons. By numerous experiments which I have made to ascertain the strength of malleable iron, it appears, that with a chord line of 550 feet, and a versed sine of 37, (or a curvature of 1-15th) a bar of good iron, one inch square, will, besides its own weight, carry 10½ tons; and about one-half of that weight before it begins to stretch. For the Menai bridge, I have taken a section of 192 square inches, which at 5½ tons to each square inch, will support 1038 tons, being a surplus of 666 above the real weight of the bridge; and there would be required a further weight of a thousand and eight tons to break down the bridge. This, I conceive, is making ample provision against any probable trial to which such a bridge can be exposed. From the elevation it will be seen, that the cables attain their curvature by passing over cast iron frames, part of which are of a pyramidal form, and the other parts are connected with the top of the masonry; from thence it will be seen, by the *dotted lines*, that these cables pass down the masonry to another cast iron frame, laid horizontally along the top of the arches, and connected with their springers by means of perpendicular rods, thereby embracing the whole mass of masonry and spandrils, making in all about 12,000 tons at each end of the bridge, and this exclusive of the great pyramids. As the weight of the bridge between the two points of suspension, including the cables, is 489 tons, there is not much reason to expect undulation, from any weight which will be laid on any particular part; but, to guard against any effect of that sort, I propose making the four sides of the road-ways of framed iron work firmly bound together for seven feet in height, and similar work for five feet in depth below the cables, which, when they meet towards the middle of the bridge, will constitute a frame-work of 12 feet deep.

"With a bridge 30 feet in breadth, and 532 in length, there is not much to be apprehended from side vibration; but, in order to provide against this operation, I have, in the plan, placed two horizontal cables, crossing the bridge diagonally, each of which laying hold of the middle of its length, and passing round a cast iron projecting frame, at the opposite sides of the great pyramids, is from thence carried to the masonry of the abutments, thus creating a diagonal stay upon 70 feet in breadth.

"When it is considered that from four to five tons are required to crush a cube of one quarter of an inch of good cast iron, there can be no doubt of the sufficiency of the cast iron frames over which the cables will pass. These cables are continued to the cast iron frames which connect the masonry of the abutments. The weight of the bridge is 489 tons, upon which, if 300 tons are placed, they make 789 tons. The pull of this weight at the abutments, upon a curvature of one-fifteenth, is found, by my experiments over a pulley with a perpendicular weight, equal to about two and a half times the weight on the other side, or 1972 tons. To counteract this, the cables are, as has already been observed, continued at nearly the same angles as those of the bridge, to the cast iron frame, which embraces about 12,000 tons of masonry, and to which much more, if necessary, might be connected.

"With regard to any change by contraction or expansion, it is known from experiments, that, with a difference of temperature of 90 degrees of Fahrenheit, the difference of length of iron would only be $\frac{7.5}{1000}$ths, or about 5 inches upon 700 feet, and as the iron work would most likely be put up at a mean temperature, the contraction would be two inches and a half, and the expansion an equal quantity, which would not derange the bridge; but if the iron suspending cables were covered with some substance, which was an imperfect conductor of heat, and which is intended, the above variation of 90 degrees of temperature could not take place.

(Signed) "THOMAS TELFORD."

According to the plan of which Mr. Telford has had a specimen made, the cables are to be formed of a number of straight half-inch bars, connected at different lengths. He has not yet entirely decided at what particular length they should be joined, or whether it would be preferable to unite a certain number of them by welding, and connect each of those lengths by joints. On the square sides of these bars will be laid segments of circles of a proper size for making the cables of a cylindrical form. The bars, as well as the segments, are each to be joined longitudinally to the whole of the required length, and secured by bucklings every five feet, and then enveloped in flannel, well saturated with a composition of resin and beeswax, to preserve them from the weather, and the whole are to be encircled with wire. But, by the following paragraph, it will be seen that Mr. Telford considers himself fully at liberty to make such alterations and improvements in this part of his plan, as he may deem expedient, on repeating his experiments, which he very judiciously proposes to extend during the progress of the work, so as to attain the most advantageous mode of applying this principle to the construction of bridges.

"The results from a bridge upon the principle of suspension (says Mr. Telford) can be satisfactorily ascertained by previous experiments; because, with a given length and curvature, it is known that malleable iron, of a good quality, can support a certain weight more than its own; and, therefore, when the weight to be supported is known, a safe rule is obtained to determine the quantity of iron required, and the goodness of each separate portion of iron to be employed can be effectually proved. The most advisable mode of combination may also be determined by similar means; and although I have already, from my experiments, formed a plan which is practicable and substantial, yet I shall certainly, during the time the stone-work is constructing, claim the privilege of repeating and extending my experiments, in order to arrive at the most perfect mode of which this principle is susceptible."

The weight of each separate cable between the points of suspension is estimated at nine tons and three-quarters, or 117 pounds per yard. The weight of a drove of oxen is calculated at about 300 tons, supposing them to amount to 200 head, all closely huddled together; and the estimated weight necessary to tear the cables asunder is upwards of 2000 tons, which is about four times the weight of the entire bridge. The passing of a mail coach over the bridge is not expected to produce any undulation, or sensible perpendicular vibration; nor is any latteral vibration apprehended from the most violent gale of wind, by reason of the proportion that the breadth of the bridge bears as a frame to its extreme length.

It has already been stated, that the experiments made by Mr. Telford were with a view to obtain the best *data* respecting the strength of the materials proposed by him to be employed in the construction of an *iron hanging-bridge* across the river Mersey at Runcorn, to connect the counties of Cheshire and Lancashire. It may here suffice to mention, that, in making those more particularly alluded to here, bars of iron were fixed at certain distances, with certain degrees of curvature, and weights hung upon them in the middle, and in different parts, till they broke. To separate a square bar of an inch and 5-16ths, required the weight of 48 tons, and it required 43½ tons to break a bar of an inch and 3-9ths in diameter. Some bars of an inch in diameter, of a foot long, stretched nearly three inches before they broke; and bars of three feet long, and one inch square, sometimes lengthened as much as eight inches before they gave way.

Iron has this peculiar property, that a certain weight extends the length of the bar. After standing some time, the bar remains of that length, and it requires an additional weight to give it an additional stretch; so that, although the actual dimensions of the sectional area of the bar becomes less, yet it bears a greater weight. Hence, should any one of the bars in this hanging-bridge, when first placed there, bear a greater weight than the one next to it, or any other bar, and be exposed to a stretch, it would soon accommodate itself to the length of the whole; and, in that state, be capable of bearing more weight than it did at first. Half-inch bars, of tolerably good iron, will bear from six tons to six and a half; but they will elongate at not much more than half that stress. It is a curious fact, and deserving of the attention of philosophers, that frequently, at the moment of rupture, the bar acquires such a degree of heat in the fractured part, as scarcely to allow a person to hold it grasped in his hand without a painful sensation of burning.

But, in addition to the experiments made by Mr. Telford, the Runcorn Bridge Committee for conducting that work, considered the undertaking of so much magnitude and novelty, that they wished personally to make some experiments to the full extent of the *centre span* of the intended bridge at Runcorn, viz. 1000 feet; and a Sub-committee having been selected for that special purpose, an experiment was tried over a valley in the neighbourhood of Liverpool, to the extent of 1000 feet the result of which experiment not only confirmed, but exceeded the calculations that had been delivered in by Mr. Telford, relative to the strength of iron under different degrees of curvature. The result proving so satisfactory, doubts previously entertained were dispelled; and subscriptions, which had been withheld, were now put down to a considerable amount: when they come up to the sum required, application will be made to Parliament, and other necessary measures taken, for the construction of the intended bridge.

From the nature of the navigation of this part of the river Mersey, the *iron hanging-bridge* projected by Mr. Telford, and by him proposed to the Runcorn Bridge Committee, is to consist of only three spans or openings; the centre span of 1000 feet, and the two others of 500 feet each, making the entire length 2000 feet. It is also necessary to keep the lower side of the road-way 80 feet above high-water mark. An arched bridge, under these circumstances, is conceived to be wholly impracticable; and (says Mr. Barlow) "both courage and genius were requisite to conceive any practicable construction. An undertaking of such immense magnitude, so perfectly original, and which, when completed, will perhaps be one of the most singular works of art that any age or nation ever produced, ought not to be attempted without the *best data* that could possibly be obtained relative to the strength of the proposed materials, under all the variety of strains to which they are likely to be exposed; and, with this particular view, Mr. Telford made a regular course of experiments, as before stated."

In fact, Mr. Telford has, for many years past, bestowed great pains, and considerable expense in making a vast number of experiments on the strength of iron suspended, as well vertically as horizontally, and with a variety of different degrees of curvature; finally, he has combined iron into the shape in which he has hitherto proposed to make the cables for the Menai Bridge, and tried experiments upon it in a model of 50 feet in length. The greater part of these experiments he performed, not by the intervention of a machine, but by absolute weight, tearing the iron in pieces in that manner; so that instead of depending on theoretical calculations, he chiefly relies on the experiments made by actual weight, in which there can be no mistake, and on which his *data* are founded. Hence the confidence which is justly placed in his plan, as thus honourably expressed by the Select Committee at the conclusion of their Third Report :—

"Your Committee feel great satisfaction in having it in their power to say that Mr. Telford has completely convinced them of the practicability of his plan. The numerous instances which he has already given to the public of his talents as a Civil Engineer, fully prove that the House may place great confidence in his opinion. But, when his opinion is supported by Mr. Rennie, and other engineers, the case of the practicability of this undertaking appears to be as completely made out as it is in the nature of things to allow of its being established.

"When it is remembered, that the first estimate prepared for Lord Colchester (when Chief Secretary for Ireland) for building a cast iron arched bridge across the Menai, amounted to £268,500 your Committee are of opinion, that the public stand greatly indebted to the industry and talents of Mr. Telford, for having contrived a plan on so secure a principle, for executing this work for the sum of £70,000."

The Menai Bridge may be completed in three years from the time of its commencement, and several hundred men are now employed in the preparatory operations. The foundation of the abutments on both shores is on solid rock. The stone, of which the masonry of the piers will be constructed, is procured in the north-east end of the Isle of Anglesea, from the estate of Lord Bulkeley, where the cliffs are nearly one hundred feet high. It is fine grey marble, perfectly solid, and in large masses, lying in a very convenient situation close to the sea shore, where it is loaded into vessels, and carried through Beaumaris Bay to that part of the Menai Strait where the bridge is to be erected.

The Menai Bridge Bill has passed the House of Commons, and is in progress through the House of Lords.

Miscellanies.

MAKING WILLS.

The indiscretion of persons who are possessed of any property not being prepared against accident, by the making of a will whilst health and reason remain to them, has been remarkably shown in the case of Mr. W. whose death by a fall from his horse we lately noticed in our paper. To the great surprise and chagrin of his widow and family, a claimant to his property has sprung up, in the person of a young woman who was in service in the house of a professional gentleman at Grantham; and it turns out that this young woman is indeed the sole heir to all that Mr. W. has died possessed of although, until she made her claim, the family had never heard of such a person. The deceased, it seems was, in early life, from the consequence of an indiscreet connexion, compelled by certain parish officers to marry the mother of the young woman. He immediately afterwards left her, and went to a distant part, (we believe to Horncastle,) where, passing as a single man, he married a respectable young woman of some property, by whom he had afterwards a family, now moving in a creditable station of life. Many years after this second marriage, being at Grantham, he accidentally met the young woman who has now come forward as the claimant of his property, and satisfying himself that she was the offspring of his early connexion with the female whom he had been compelled to marry, (and who, he learned, had been dead for 18 years,) he told the girl that he would befriend her, and did, two or three times afterwards, show such an interest in her welfare, as led the girl to entertain suspicions (which the parish registers and other proofs have now shown to be well warranted) of Mr. W.'s being her father. We understand that the proofs are indisputable; and consequently, as the second marriage was contracted during the life-time of the first wife, the present respectable widow and her family will, by law, lose all the property of which the father and supposed husband died possessed.—*Stamford Mercury.*

SHOCKING MURDER.

A dreadful circumstance took place at Brighton, in the barrack-yard in Church-street, facing the royal stabling, on Tuesday afternoon se'nnight. At about half-past four o'clock, the military, the 90th infantry, turned out there for the afternoon's parade. A private of the name of Broadbent, who had been confined in the morning for being absent from duty, was released by the orderly serjeant, Watson, to fall in for the parade. The fellow, meditating revenge for the confinement he had endured, no sooner had his musket in his possession, than, as it seems, he charged it with a ball cartridge, and as Serjeant Watson descended from his room to the barrack-yard, he deliberately took aim at him, and shot him through the body. The ball entered on one side, near about the ribs, and came out at the other. The serjeant staggered a few paces backward, and dropped. Surgical assistance was useless. He did not survive the fatal wound more than twenty minutes. The horrible deed was perpetrated in the midst of the soldiers mustering for the parade: many of them supposed the gun had been fired from the other side of the yard-wall, and were in the act of scaling it to discover by whom, when the miscreant threw down his piece, and exclaimed, that he was the man, and that he had then had his revenge, and was in no wise sorry for what he had done. He was then secured, and the High Constable sent for, on the arrival of whom he was marched from the barracks, and lodged in the town prison, two sentinels being placed on duty to guard the door. The deceased bore a very excellent character in the regiment. He was the orderly sergeant appointed at the Pavilion, and who did duty in that capacity during the whole time that the Prince Regent was there last winter. He has left a wife and three children to deplore his premature loss.

The following are further particulars of this atrocious deed:—At half-past four o'clock on Tuesday, as the companies of the 90th infantry were about to fall in for the evening parade, Edward Broadbent, a private, fired his musket at serjeant Watson, who was observed instantly to fall upon his right knee, and then backwards to the ground. Several of the men hastened to the assistance of the wounded man, who was only heard to utter, "*My God! my God! I am shot!*" when he became totally insensible, and died in about half an hour afterwards. The ball had entered two inches below the right shoulder-blade, and passed completely through his body, about three inches to the right of the heart. The assassin was immediately secured; and, on being asked why he committed so cruel an act? coolly replied, "Watson had tyrannized over him, and he was determined that he should do so no more." "Just before the hour of parade, his accoutrements were brought, which he put on, and one of his comrades shaved him, he (Broadbent) being solicitous to appear in a clean and proper manner. A circumstance happened at this time, which shows the collected and decided state of his mind on the murderous purpose he had formed. He was seen to prime his piece, without flashing the powder in the pan to light his pipe with (a custom common with soldiers.) A comrade, upon this, took up the musket, and cast the priming on the ground. Broadbent snatched the instrument angrily from the man's hands, declaring that it was his own piece, and he would do as he liked with it. Whether the musket was then loaded, is not known, nor was he observed to load it at all, nor afterwards to prime it. Not a word, or action, indicative of his design, escaped him from this period. When he fired, he stood only about six yards from the deceased. The bullet, after leaving the body of Watson, struck the barrack-wall and was picked up.—Edward Broadbent, the assassin, is 29 years of age. His friends, who, we understand, are respectable, reside at Manchester. He has been thirteen years in the regiment, having joined it in 1806, at Horsham. He has been fully committed to the county gaol, to take his trial at the next assizes.—*London papers, July 2.*

A dreadful circumstance has recently spread consternation among the inhabitants of Clermont, in the department of Puy de Dome. A young father of a family exercising with distinction in that town a lucrative profession, and enjoying public, as well as private estimation, has for some months past, lost his reason. He was sent to Paris to be cured, and his wife having lately gone there to see him, believed him so much the better, that she yielded to his pressing instances to be taken home again. He arrived at Clermont on the evening of the 12th inst. and next morning he prevailed on his wife, under some pretence, to go with him into the cellar. Some minutes after, his sister-in-law went to tell him that the barber was waiting for him; but she staid so long that the latter went away. Finding none of them come up, a servant went down into the cellar, when she found her mistress and her sister bathed in their blood; their heads having been nearly severed from their bodies with a razor, which was lying beside them. The husband was found concealed in a corner of the cellar, totally insensible of the dreadful act he he had committed. His wife was 25 years old, and her sister 18 or 20; both very amiable young ladies; and the former has left three infant orphans, to lament her unhappy end, and their father's dreadful affliction.

JUVENILE MECHANISM.

A boy, named John Young, residing in Newton-upon-Ayr, has constructed a piece of mechanism, of which the following is some account:—A box, about three feet long, by two broad, and six or eight inches deep, has a frame and paper covering erected on it, in the form of a house, so that the box appears as the floor of a house. On the upper part of the box are a number of wooden figures, about two or three inches high, representing people employed in those trades or sciences with which the boy is familiar. The whole is put in motion at the same time by machinery, within the box, acted upon by a handle like that of a hand organ. A weaver upon his loom, with a fly-shuttle, uses his hands and feet, and keeps his eye upon the shuttle as it passes across the web. A soldier, sitting with a sailor at a change-house table, fills a glass, drinks it off, then knocks on the table, upon which an old woman opens a door, makes her appearance, and they retire. Two shoemakers upon their stools are seen, the one beating leather and the other sewing a shoe. A cloth dresser, a stone cutter, a cooper, a tailor, a woman churning, and one teasing wool, are all at work. There is also a joiner sawing a piece of wood, and two blacksmiths beating a piece of iron, the one using a fore hammer and the other a small hammer, a boy turning a grindstone while a man sharpens an instrument upon it, and a barber shaving a man holding fast by the nose with one hand. The boy is only about 17 years of age, and since the bent of his mind could be first marked, his only amusement was his working with a knife, making little mechanical figures, and this is the more extraordinary, as he had no opportunity whatever of seeing any person employed in a similar way. He was bred a weaver with his father, and since he could be employed at the trade, has had no time for his favourite study, except after the work ceased, or during the intervals; and the only tool he ever had to assist him was a pocket knife. In his earlier years he produced several curiosities on a smaller scale, but the above is his greatest work, to which he has devoted all his spare time during the last two years.—*Caledonian Mercury.*

Female Calculator.—A little girl, about eleven years old, appeared on the London Royal Exchange on Friday week, and made some very extraordinary calculations in figures by her head only. Several gentlemen asked her some most intricate questions; and while they were calculating on paper, she gave a correct answer: she was asked to multiply 525,600 by 250, which she did in one minute, and answered 131,400,000. Again; if a man was 42 years old, how many minutes old was he? Answer, 22,076,200. She was then desired to multiply 525,600 by 450: answer, 236,520,000. Several other questions, equally difficult, were put, all of which she answered very correctly. She says she can neither read nor write, that her name is Heywood, and that she is the daughter of a weaver, living in Mile End New Town. She was rewarded with several small sums by the gentlemen present.

Mons. Chabert, the celebrated fire-eater, recently exhibited his wonderful capability of resisting the effects of heat, at the Theatre, Penzance. After going through the various feats of standing in melted lead, eating burning torches, &c. he concluded by getting into a frame-work, on which was hung a number of rockets, and to which he was to set fire, whilst he remained exposed to the flame, until his clothes were literally burnt from his body. On exhibiting this experiment, the house became filled with smoke, and the sulphurous smell became so intolerable, that the auditory were forced to seek a purer atmosphere. But as the means of egress did not allow of their doing this as quickly as was necessary, several persons fainted, and a scene of general confusion ensued.—The screams for assistance became loud and piercing; a cry of fire was raised, and the crowd that quickly assembled, lost no time in breaking through the roof in order to extricate those imprisoned within, who, by tumbling over each other, had nearly blockaded up the ordinary passages. Happily this expedient, by allowing the smoke to evaporate, and giving an opportunity of removing to the open air those who had become insensible, prevented a fatal termination of the disaster, which, in all probability, would have otherwise occurred.

The Sadler of Bawtry.—It was, in ancient times, the custom to present to malefactors, on their way to execution, a great bowl of ale, as their last refreshment. This custom last prevailed at York, which gave rise to the saying, that the sadler of Bawtry was hanged for leaving his ale. Had he stopped as usual, which he declined, his reprieve, which was actually on the road, would have arrived time enough to have saved him.

Wholesale Baptism.—The very singular circumstance occurred at Boston Church, on Sunday fortnight, of nine children of the same parents being all baptized at the same time. The eldest, we understand, is only about sixteen years of age. The father is a boatman, and, besides these nine, is blessed with a tenth child, now quite an infant.

The Gleaner.

"I am but a gatherer and disposer of other men's stuff." WATTON.

THE CITY OF TIMBUCTOO.

(From Lieut. Colonel Fizclarence's Journal.)

On returning from Alexandria in his Majesty's ship Tagus, the author was a fellow passenger with Muly Ali and Muly Omar, two sons of the Emperor of Morocco, who had been on a pilgrimage to Mecca, under the charge of Hadjee Talub Ben Jelow, a successful merchant, of immense property. He was mild and communicative, and imparted some very striking information relative to the celebrated city of Timbuctoo, of which the folowing account is given:—

"But what has caused most interest amongst us, is a discovery we have made that Hadjee Taleb Ben Bulow, as well as several others on board, have been several times at Timbuctoo on commercial speculations; and, as the Governor is very communicative, he has answered a number of questions put to him by Captain Dundas and myself. As we were well aware of the diversity of opinions respecting the size and situation of that city, it was the first subject to which we drew his attention. Upon enquiring about Tombuctoo, the Hadjee laughed at our pronunciation, the name of the city being Timbuctoo: it is situated about two hours' journey from the great river. He says, the King of Timbuctoo is a negro, and resides at Kabra, which is the port of Timbuctoo, being upon the Nijer. The houses, he states, are low and mean: the inhabitants have no shops, but there are stalls for selling the necessaries of life under leather tents. The habitations are built of clay and loose stones, though some of them must be two stories high, from their having stairs. He says there are mosques at Timbuctoo, which agrees with the evidence of Hadjee Benata, who asserts, 'that there are Mahometans there;' and some of 'no religion at all; while Hadjee Talub's account is, that all religions are tolerated: the majority of the inhabitants are, according to this description, negroes. The cow at Timbuctoo has a hump upon its shoulder, and appears rather larger than the Indian cow: these the natives ride on. In 1807, the King's name was Boobkier, that of the Queen Fatima: the dress of the latter is represented to be a short blue petticoat with a stripe of lace; his was said to have cost 160 dollars at Timbuctoo. With respect to the Nijer, he states that it runs towards the east, or as he terms it towards Mecca. He has invariably called it the Nile, but another person on board, of the name of Hadjee Benata (whose bad state of health for a length of time prevented our gaining much information from him) calls it Dan, but confirms the interesting fact which was so long contested, of the river running to the east. The Nijer is reported to be a quarter of a mile broad at Kabra; but in the summer it is much more considerable. Hadjee Talub has understood that the river runs into a large fresh water sea in the interior of the country, which he calls Behur Soldan: that from this sea the Nile of Egypt takes its rise, so that he calls it the same river, and that, half way to Cairo there are great falls and cataracts, which prevent boats from passing. This account of the source of the Nile may, however, be reasonably doubted. The boats on the river are of a middling size, flat bottomed, having no sails, and being constructed without nails. They are formed of the bark of trees, and some of them are as large as a frigate's launch, or about twenty-eight feet long. Our informant, Hadjee Talub, adds, that crocodiles abound in the river, are very voracious, and are taken by being harpooned with an instrument with five prongs. There are vast quantities of fish in the Nijer, which, from their colour and size, are supposed to be salmon. Hadjee Benata states, that Timbuctoo is three times the size of Alexandria; and Hadjee Talub conceives the population to be about 60,000, and represents their character as being good and friendly, though he has heard of people being shot for theft, and of offenders being beat on the back with the skin of an animal dried and cut into thongs! He says there are cocoa-nuts and dates in abundance, and water-melons in great plenty, but all grow wild, there being no garden whatever. The woods in the neighbourhood of Timbuctoo are described as being full of game, and lions and beasts of prey are often seen in the neighbourhood of the town. Hares and rabbits are in vast quantities; and the only dog they have is a greyhound, which is trained to catch these animals: cats they have none. The city is well supplied with every kind of provisions, and it is customary for the natives to eat elephant's flesh, which animal is stated to exist in immense herds in the vicinity. Their flesh appeared palatable to Hadjee Talub, tasting like beef, but being quite white. They are ferocious animals, and will attack single persons, which obliges men who will ride alone, to carry a horn to frighten them away. There are two methods of hunting the elephants, one by driving them into the river, where men, by swimming, get on their backs, and cut and destroy them: the other, by driving them into pits, and there butchering them: a few are tamed.

"As to their commerce, it is carried on between Fez and Timbuctoo, generally by caravans, which leave the former place in March and October, as does that of Mecca at the same season. The articles which sell best at Timbuctoo, are salt, tobacco, European scarlet cloth, and English printed cottons, besides pistols and guns. This traffic returns elephants' teeth (of which two are so large as to be a load for a camel) slaves, and gold. The gold is generally in small bags, in each of which is an ounce valued at fifteen dollars: it is extremely pure and fine: they have also pieces of gold weighing about five ounces. This precious article is very common, and comes from the south-west, where it is found in great quantities. The negroes wear bracelets and other ornaments of this metal, and Hadjee has presented Captain Dundas with some gold articles, consisting of part of a necklace, a pair of ear-rings, and some braids for the hair, similar to the filagree work of the archipelago of the eastern seas; which he states that the workmen manufactured as they do in Java and Sumatra, in the house of their employer, by whom they are hired like journeymen. The price of a male slave is from sixteen to twenty dollars

"He speaks of a tribe called Shullahs, who are a savage race, living in leather tents, and of a warlike and brave spirit. They are armed with a long sword, sharp on both sides, though some of them carry a javelin. For defence, they have a shield made of leather, about five feet long and four broad, which covers their whole persons. Their dress consists of a blue shirt and white trowsers. He represents the women as being very fat, and having a protuberance behind, like the Hottentot women, of whom we have heard so much. The Shullahs receive a certain tribute from the negroes of Timbuctoo, and never cross the river. During the summer, they remain two days' journey to the east, but in winter come close to the city. The women perform all the agricultural labours in the field.

"We made inquiries respecting the caravans from Fez to Timbuctoo, and from Timbuctoo in various other directions. He says he travelled by the regular caravan in three months and ten days from Fez to Timbuctoo, but the year after he went the same journey with a guide and two guards in twenty-nine days, on a herrie, performing four days' journey in one. There is no want of water during the winter time; but hordes of Arabs attack travellers at that season. The herrie is mentioned as being the fleetest animal that can be conceived; it is like a dromedary, but is as superior in speed to the generality, as a race horse is to a cart horse.

"There runs a tradition that there was at one time a regular caravan from Timbuctoo direct to Cairo, but the distracted state of the country has of late rendered it so unsafe as to prevent it altogether. Indeed, as two Shullahs accompanied the caravan from Fez to Mecca having come from Timbuctoo for that purpose, Capt. Dundas thinks, in which Hadjee Talub agrees with him, that there is now no direct communication between that city and Cairo. With respect to intercourse toward the east and south-east, our traveller speaks of Houssa being a considerable city, but at such a distance from Timbuctoo that the latter city is only half-way between it and Fez. It is described to be a place of great traffic, where the cloth used by the inhabitants of Timbuctoo is manufactured. Neither he nor Hadjee Benata know any thing of Wassana, although they are acquainted with a large place, twenty days' journey south-east from Timbuctoo, called Massana. Indeed the latter states that his mother came from thence. Beyond this place, to the south-east, are a people who eat their prisoners.

"During our various conversations, Hadjee Talub mentioned, that eleven years ago, in 1807, when at Timbuctoo, he heard of two white men, who came from the sea, having been near that city. This was the year before he arrived at Timbuctoo, and he understood that the white men sold beads, as they had no money to purchase grain. He adds, that they went down the Nile to the eastward, and that general report stated that they had died of the climate. This appeared to Captain Dundas and myself, to allude to, and certainly all circumstances tend to prove, that these persons were Mr. Park and Lieutenant Martyn, who would have arrived there about that period. However, the pacific conduct and friendly intercourse mentioned by Hadjee Talub disagrees with the journal of Amadi Fatouma, who speaks of hostility taking place off Timbuctoo, which city is not on the Niger; and in what regards the fate of these gentlemen, they differ as to the mode of their death.

"It was natural that we should attempt to ascertain if it was practicable for a Frank to pass from Fez to Timbuctoo, and if he thought the Emperor of Morocco would assist the views of any Englishmen in reaching that city, which he answered with the greatest confidence in the affirmative. As to any danger with the caravan, he expresses a conviction that there is not the slightest; but singly, he thinks, that great risks would be hazarded. I further asked him, whether, if duly rewarded, he would accompany me to Timbuctoo, to which he assented with the utmost readiness; and added, that we could reach that city in forty-seven days from Fez on horseback, and that he would forfeit his life if he did not bring me back safe.

"I conceive from this, from the universal renown of our nation, and from the friendly terms on which we stand with all the world, that a British agent properly accredited, and his objects fairly stated, namely, commerce and rational curiosity, could not fail of being not only safe, but well received, and put in a situation to solve the great geographical problem of the *course and termination of the Nijer.*"

CALABRIA ULTERIOR.

A Naval Officer, who travelled in Italy, in the year 1810, gives the following description of the magnificent appearance of Appenine Scenery.

"We marched for the first two hours through defiles which wound among the rocks, the ascent being always rugged, and in some places very steep. In a few minutes our clothes were wet through, as the rain descended in torrents, accompanied with tremendous thunder and lightning, which, together with the boisterous wind and the bold and stupendous scenery, left nothing for the imagination to supply in a picture at once awful and sublime. All that the mind is capable of inventing of the wild, the grand, and the terrific, was here realized, and presented to the view. The mountains in some places were nearly perpendicular: and, although united below in one vast base, they consisted of detached ridges, which were mostly covered with trees and brushwood to their summits. We ascended several of these in succession. From the loftiest parts the prospect was extensive. The magnificent disorder that every where appeared, could not fail of striking the beholder with astonishment; and his reflection would be employed on the remarkable convulsions that must have occasioned it. His attention would, at one time, be directed to a range of abrupt and tremendous precipices, on which, as he stood on their brink, he would look down with dismay; at another, to mountains so disposed as to form a vast natural amphitheatre, the bottom or area of which was so far beneath him, as to be scarcely distinguishable, and having its spacious sweep overgrown with large timber trees. On one hand he would observe dark recluse dells, and numerous clefts and chasms interrupting or dividing the chain: on the other, a collection of hills, lofty, yet diminutive, and resembling so many artificial pyramids. On leaving this elevated situation, and descending for half an hour, he could only contemplate the stupendous height of the mountains by which he was surrounded, and which, in this reverse of the scene, bounded his view. On proceeding, he would find the path, from the impending trees and vast fragments of rocks, gloomy and silent as a subterranean passage: and, again ascending, the obscurity would gradually diminish, and the prospect expand."

Family Pride.—That *fashion*, in all her windings and whimsicalities, should ever aspire to a halter, is a circumstance not less extraordinary than true.—In Georgia, people of quality exercise the office of *executioner*; and so far from its being infamous, it reflects honour on a whole family.—A Georgian will boast of the nobleness of his blood by the number of *haugmen* he has had among his ancestors!—So much for *nobility!*

Calendar of Nature.

(From the Literary Pocket-Book.

JULY.

Then came hot July, boiling like to fire,
That all his garments he had cast away.
Upon a lyon raging yet with ire
He boldly rode, and made him to obey:
(It was the beast that whilom did forray
The Nemaean forest, till the Amphitrionide
Him slew, and with his hide did him:)
Behind his backe a sithe, and by his side
Under his belt he bore a sickle circling wide.
SPENSER.

July is so called after Julius Cæsar, who contrived to divide his names between months and dynasties, and among his better deeds of ambition reformed the calendar.

The heat is greatest in this month, on account of its previous duration. The reason why it is less so in August is, that the days are then much shorter, and the influence of the sun has been gradually diminishing. The farmer is still occupied in getting the productions of the earth into his garners; but those who can avoid labour, enjoy as much rest and shade as possible. There is a sense of heat and quiet all over nature. The birds are silent. The little brooks are dried up. The earth is chapped with parching. The shadows of the trees are particularly grateful, heavy, and still. The oaks, which are freshest because latest in leaf, form noble clumpy canopies, looking, as you lie under them, of a strong and emulous green against the blue sky. The traveller delights to cut across the country through the fields and the leafy lanes, where nevertheless the flints sparkle with heat. The cattle get into the shade, or stand in the water. The active and air-cutting swallows, now beginning to assemble for migration, seek their prey about the shady places, where the insects, though of differently compounded natures, "fleshless and bloodless,"* seem to get for coolness, as they do at other times for warmth. The sound of insects is also the only audible thing now, increasing rather than lessening the sense of quiet, by its gentle contrast. The bee now and then sweeps across the ear with his gravest tone. The gnats

Their murmuring small trumpets sounden wide:—
SPENSER.

and here and there the little musicians of the grass touches forth his tricksy note.

The poetry of earth is never dead;
When all the birds are faint with the hot sun,
And hide in cooling trees, a voice will run
From hedge to hedge about the new-mown mead:
That is the grasshopper's.
KEATS.

Besides some of the flowers of last month, there are now candy-tufts, catchfly, columbines, egg-plant, French marygolds, lavateras, London-pride, marvel of Peru, veronicas, tuberoses, which seem born of the white rose and lily; and scarlet-beans, which though we are apt to think little of them because they furnish us with a good vegetable, are quick and beautiful growers, and in a few weeks will hang a walk or trellis with an exuberant tapestry of scarlet and green.

The additional trees and shrubs in flower are bramble, buttonwood, iteas, cistuses, climbers, and broom. Pimpernel, cockle, and fumitory, are now to be found in corn-fields, the blue-bell in wastes or by road-sides; and the luxuriant hop is flowering.

The fruits begin to abound and are more noticed, in proportion to the necessity for them occasioned by the summer heat. The strawberries are in their greatest quantity and perfection; and currants, gooseberries, and raspberries, have a world of juice for us, prepared, as it were, in so many crowds of little bottles, in which the sunshine has turned the dews of April into wine. The strawberry lurks about under a beautiful leaf. Currants are also extremely beautiful. A handsome bunch looks like pearls or rubies, and an imitation of it would make a most graceful ear-ring. We have seen it, when held lightly by fair fingers, present as lovely a drop, and piece of contrast, as any holding hand in a picture of Titian.

Bulbous rooted flowers, that have almost done with their leaves, should now be taken up, and deposited in shallow wooden boxes. Mignonette should be transplanted into small pots, carnations be well attended to and supported, and auriculas kept clean from dead leaves and weeds, and in dry weather frequently watered.

It is now the weather for bathing, a refreshment too little taken in this country, either in summer or winter. We say in winter, because with very little care in placing it near a cistern, and having a leathern pipe for it, a bath may be easily filled once or twice a week with warm water; and it is a vulgar error that the warm bath relaxes. An excess, either warm or cold, will relax; and so will any other excess; but the sole effect of the warm bath moderately taken is, that it throws off the bad humours of the body by opening and clearing the pores. As to summer bathing, a father may soon teach his children to swim, and thus perhaps might be the means of saving their lives some day or other, as well as health. Ladies, also, though they cannot bathe in the open air as they do in some of the West Indian islands, and other countries, by means of natural basins among the rocks, might oftener, we think, make a substitute for it at home in tepid baths. The most beautiful aspects under which Venus has been painted or sculptured, have been connected with bathing; and indeed there is perhaps no one thing that so equally contributes to the three graces, of health, beauty, and good temper:—to health, in putting the body into its best state; to beauty, in clearing and tinting the skin; and to good temper, in rescuing the spirits from the irritability occasioned by those formidable personages "the nerves," which nothing else allays in so quick and entire a manner. See a lovely passage on the subject of bathing in Sir Philip Sidney's Arcadia, where "Philoclea, blushing, and without smiting, making shamefastnesse pleasant, and pleasure shamefast, tenderly moved her feet, unwonted to feel the naked ground, until the touch of the cold water made a pretty kind of shrugging come over her body, like the twinkling of the fairest among the fixed stars."—P. 138, Ed. 1638.

* Anacreon on the Grasshopper.

☞ It has been suggested, that it would enhance the value of the *Kaleidoscope*, if we would give insertion to an article under this head, which appears successively in each number of the *Monthly Magazine*. We therefore commence the series with the First Number of the Second Volume.

ACTS PASSED IN THE 59TH YEAR OF THE REIGN OF GEORGE THE THIRD, OR IN THE FIRST SESSION OF THE SIXTH PARLIAMENT OF THE UNITED KINGDOM.

Cap. XXVI. *For fixing the Rates of Subsistence to be paid to Innkeepers and others on quartering Soldiers.*—April 8.

Allowance for the diet of non-commissioned officers and soldiers, 1s 2d. per day.

Allowances of one halfpenny per diem, in lieu of diet and small beer.

For horses quartered, 1s. per day to be paid for hay and straw.

Persons paying money to non-commissioned officers or soldiers on the march, in lieu of furnishing diet and small beer, liable to be fined.

When halted on a march, non-commissioned officers and soldiers entitled to diet and small beer, as after arriving at their destination; and, if such halting be only for a day after arrival, and that be a market-day, their diet and small beer not to be discontinued.

Cap. XXVII. *To facilitate the Trial of Felonies committed on board Vessels employed on Canals, Navigable Rivers, and Inland Navigations.*—May 19.

Felonies on navigations may be prosecuted in any country through which the navigation passes.

Persons so tried and convicted, to be subject to like pains and penalties as if tried in the county where the fact was committed.

Cap. XXVIII. *To empower Magistrates to divide the Court of Quarter Sessions.*—May 19.

Courts of quarter sessions, or general sessions of the peace, may appoint two or more justices to form a court to sit apart from them.

Clerk of the peace to appoint a person to record the proceedings of such separate court.

Cap. XXIX. *To repeal the Duties on Mineral Alkali, and on Articles containing Mineral Alkali and other Articles, and to impose other Duties in lieu thereof.*—May 19.

Cap. XXX. *For vesting in Commissioners the Line of Road from Shrewsbury, in the County of Salop, to Bangor Ferry, in the County of Carnarvon, and for discharging the Trustees under several Acts of the Seventeenth, Twenty-eighth, Thirty-sixth, Forty-first, Forty-second, Forty-seventh, and Fiftieth Years of his present Majesty, from the future Repair and Maintenance thereof; and for altering and repealing so much of the said Acts as affects the said Line of Road.*—May 19.

Cap. XXXI. *To enable certain Commissioners fully to carry into effect several Conventions for liquidating Claims of British Subjects, and others, against the Government of France.*—May 19.

Cap. XXXII. *To continue until the 5th Day of July, 1822, and amend so much of an Act made in the Fifty-fifth Year of his present Majesty, for granting, until the 5th Day of April, 1819, additional Duties of Excise in Great Britain, as relates to Tobacco and Snuff, and certain Excise Licences.*—May 19.

Cap. XXXIII. *To continue, until the 1st Day of July, 1821, several Acts of the Fifty-fourth and Fifty-fifth Years of his present Majesty, respecting the Duties of Customs payable on Merchandize imported into Great Britain from any Place within the Limits of the Charter granted to the United Company of Merchants of England trading to the East Indies.*—May 19.

AMERICAN TRAVELLING.

(New York Daily Advertiser, May 28.)

We are indebted to the Editor of the Advocate who was one of the party in the enterprize, for the following statement.

It was suggested that a trip might possibly be made to Philadelphia and back again in *one day*; accordingly a party of gentlemen left this city yesterday morning, in the Post Chaise Line across Staten Island, arrived at Philadelphia, partook of some refreshment at the Mansion House, and returned to supper, at Niblo's, before 9 o'clock—performing with ease a distance heretofore unknown in this or any other country.

The party consisted of five, exclusive of the proprietor and driver, and left the quarantine ground precisely at 5 o'clock, arrived at Woodbridge, at 24 minutes after 4; at Brunswick at half past 5; at Princeton at 7 minutes past 7; at Trenton, at 11 minutes past 8; at Bristol, at 10 minutes past 9; and in Philadelphia, at 11, and the New York morning papers were delivered in Philadelphia at that hour; the party in return, reached the quarantine ground at 8—starting at dawn and getting back at dusk, and comprehending a distance of 160 miles, exclusive of 18 miles by water in one day.

This has never been equalled, and the horses went at a pleasant trot—no racing or galloping, and very little fatigue was sustained.

This effort is highly honourable to the enterprize of the proprietors of the Post Chaise Line, who merits encouragement for their despatch, and the comfort and convenience of their stages. Twenty-five minutes were allotted to dinner at Philadelphia.

A young musician of Plymouth has, with much ingenuity, invented a curious instrument, which he calls the *Musical Telegraph*. The discovery appears of great importance, as by it the laws of harmony and elements of thorough-bass are clearly and scientifically illustrated, and the study of the theory of the science simplified.

Literary Notices.

MAZEPPA. A POEM.

By Lord Byron.

London, 1819.

(From the Scotsman of Saturday, July 3.)

Had Lord Byron written nothing but *Mazeppa*, it would be impossible to dispute his right to be placed among the first of our living poets; but *Mazeppa* has no right to be placed among the first of his Lordship's poems. It is not equal even to the *Siege of Corinth:* it is without the fire of the *Giaour* and the *Bride of Abydos*, and has no pretensions to the richness of *Childe Harold*, the *Corsair*, or *Lara*. From the opening; indeed, we suspected it was a parody on the author's former productions. The levity with which the sex is treated; the low estimation of female morality; the keen perception of those beauties only which are regarded by the sensualist, with an almost total disregard of mental or moral beauty: the proud and impenitent recollections of passions indulged, and hate cherished and gratified, seemed to be so much in the spirit, without the felicity and power of the *Giaour*, that we really were inclined for some time to consider *Mazeppa* as a sort of burlesque imitation; but we had not proceeded far when we became convinced that the poem was genuine. The fable is without the unities. It may be said to have neither beginning, middle, nor end. Charles of Sweden, in his flight after losing the battle of Pultowa, pauses for a little rest in a forrest near the Borysthenes. Among his companions in arms is Mazeppa, the brave and hardy old Hetman, or Chief of the Ukraine Cossacks; and to divert the attention of the Royal Swede from his wounds and misfortunes, Mazeppa relates an adventure which arose out of his libertine intrigues. As a punishment for an injury done to a Polish Nobleman, he was bound, "in nature's nakedness," on the back of an untamed steed; and the animal, in a most furious state, is driven out with his living burden, into a wild uninhabited country. The merit of the poem consists in depicting the feelings and sufferings of the bound rider.

"The word was past; 'twas more than noon,
But chill the air, although in June;
Or it might be my veins ran cold—
Prolong'd endurance tames the bold:
* * * * *
The earth gave way, the skies roll'd round,
I seem'd to sink upon the ground;
But err'd, for I was fastly bound.
My heart turn'd sick, my brain grew sore,
And throbb'd awhile, then beat no more:
The skies spun like a mighty wheel;
I saw the trees like drunkards reel
And a slight flash sprang o'er my eyes,
Which saw no farther; he who dies
Can die no more than then I died.
O'ertortured by that ghastly ride,
I felt the blackness come and go,
And strove to wake; but could not make
My senses climb up from below:
I felt as on a plank at sea,
When all the waves that dash o'er thee,
At the same time upheave and whelm,
And hurl thee towards a desert realm.
My undulating life was as
The fancied lights that flitting pass
Our shut eyes in deep midnight, when
Fever begins upon the brain;
But soon it pass'd, with little pain,
But a confusion worse than such:
I own that I should deem it much,
Dying, to feel the same again;
And yet I do suppose we must
Feel far more ere we turn to dust:
No matter; I have bared my brow
Full in Death's face—before—and now.
My thought's came back; where was I? Cold,
And numb, and giddy: pulse by pulse
Life reassumed its fingering hold,
And throb by throb; till grown a pang
Which for a moment would convulse.
My blood reflow'd, though thick and chill;
My ear with uncouth noises rang,
My heart began once more to thrill;
My sight returned, though dim; alas!
And thicken'd, as it were, with glass.
Methought the dash of waves was nigh:
There was a gleam too of the sky,
Studded with stars;—it is no dream!
The wild horse swims the wilder stream!"

After performing impossibilities, the noble animal at last fell:

"The sun was sinking—still I lay
Chain'd to the chill and stiffening steed,
I thought to mingle there our clay;
And my dim eyes of death had need,
No hope arose of being freed;
I cast my last looks up the sky,
And there between me and the sun
A saw th' expecting raven fly,
Who scarce would wait till both should die,
Ere his repast begun;
He flew, and perch'd, then flew once more,
And each time nearer than before;
I saw his wing through twilight flit,
And once so near me he alit
I could have smote, but lack'd the strength;
But the slight motion of my hand,
And feeble scratching of the sand,
Th' exerted throat's faint struggling noise,
Which scarcely could be call'd a voice,
Together, scar'd him off at length.—
I know no more—my latest dream
Is something of a lovely star
Which fix'd my dull eyes from afar,
And went and came with wandering beam,
And of the cold, dull, swimming dense,
Sensation of returning sense,
And then subsiding back to death,
And then again a little breath,
A little thrill, a short suspense,
An icy sickness curdling o'er
My heart, and sparks that cross'd my brain—
A gasp, a throb, a start of pain,
A sigh, and nothing more."

We need not say that Mazeppa was relieved; but we are only enabled to conjecture the rest of his history.

An Ode follows, of which it is difficult to say which are more eminent,—its merits or defects.—We give a specimen.

The flow and ebb of each recurring age,
The everlasting *to be* which *hath been*,
Hath taught us naught or little: still we lean
On things that rot beneath our weight, and wear
Our strength away in wrestling with the air;
For 'tis our nature strikes us down: the beasts
Slaughtered in hourly hecatombs for feasts
Are of as high an order—they must go
Even where their driver goads them, though to slaughter.
Ye men, who pour your blood for kings as water,
What have they given your children in return?
A heritage of servitude and woes,
A blindfold bondage, where your hire is blows.
What! do not yet the red-hot ploughshares burn,
O'er which you stumble in a false ordeal,
And deem this proof of loyalty the *real*;
Kissing the hand that guides you to your scars,
And glorying as you tread the glowing bars?
All that your sires have left you, all that Time
Bequeaths of free, and History of sublime,
Spring from a different theme!—Ye see and read,
Admire and sigh, and then succumb and bleed!
Save the few spirits, who despite of all,
And worse than all, the sudden crimes engender'd
By the down-thundering of the prison-wall,
And thirst to swallow the sweet waters tender'd,
Gushing from Freedom's fountains.
Still, still for ever
Better, though each man's life-blood were a river,
That it should flow, and overflow, than creep
Through thousand lazy channels in our veins,
Damm'd like the dull canal with locks and chains,
And moving as a sick man in his sleep,
Three paces, and then faltering:—better be
Where the extinguished Spartans still are free,
In their proud charnel of Thermopylæ,
Than stagnate in our marsh,—or, o'er the deep
Fly, and one current to the ocean add,
One spirit to the souls our fathers had,
One freeman more, America, to thee!

A prose fragment, which is not without reference to the author himself at the outset, and which attains a sort of mystic and painful sublimity before its close, makes up the volume. There is genius here, and high genius too; but it is not well directed or regulated.

☞ The prose fragment alluded to in the preceding paragraph is a very singular composition, and will remind our readers of the story of *The Vampyre*, given in a former number of the *Kalcidoscope*; and first published in London, as the production of Lord Byron. That story, however *outré*, is more complete, though not so well told as the fragment which we shall present to our readers in the next number of the Kaleidoscope.—*Edt Kaleid.*

THE ORPHAN MAID.

From the new Series of "Tales of my Landlord."

November's hail-cloud drifts away,
November's sun-beam wan,
Looks coldly on the castle grey,
When forth comes Lady Anne.

The orphan by the oak was set,
Her arms, her feet, were bare,
The hail-drops had not melted yet,
Amid her raven hair.

"And, dame," she said, "by all the ties
That child and mother know,
Aid one who never knew these joys;
Relieve an orphan's woe!"

The Lady said, "An orphan's state
Is hard and sad to bear;
Yet worse the widow'd mother's fate,
Who mourns both both lord and heir.

"Twelve times the rolling year has sped,
Since, while from vengeance wild
Of fierce Strathallan's Chief I fled,
Forth's eddies whelm'd my child."

"Twelve times the year its course has born,"
The wandering maid replied,
"Since fishers on St. Bridget's morn
Drew nets on Campsie side.

"St. Bridget sent no scaly spoil
An infant, well nigh dead,
They saved, and rear'd in want and toil,
To beg from you her bread."

That orphan maid the lady kiss'd—
"My husband's looks you bear;
Saint Bridget and her morn be bless'd!
You are his widow's heir."

They've robed that maid, so poor and pale,
In silk and sandals rare;
And pearls, for drops of frozen hail,
Are glistening in her hair.*

* *The admirers of pure Celtic antiquity notwithstanding the elegance of the above translation, may be desirous to see a literal version from the original Gaelic, which is subjoined.*

LITERAL TRANSLATION.

The hail-blast had drifted away upon the wings of the gale of autumn. The sun looked from between the clouds, pale as the wounded hero who rears his head feebly on the heath when the roar of battle hath passed over him.

Fincle, the Lady of the Castle, came forth to see her maidens pass to the herds with their leglins.

There sat an orphan maiden beneath the old oak-tree of appointment. The withered leaves fell around her, and her heart was more withered than they.

The parent of the ice (poetically taken for the frost) still congealed the hail-drops in her hair; they were like the specks of white ashes on the twisted boughs of the blackened and half-consumed oak.

And the maiden said, "Give me comfort, Lady, I am an orphan child." And the Lady replied, "How can I give that which I have not? I am the widow of a slain lord—the mother of a perished child. When I fled in my fear from the vengeance of my husband's foe, our bark was overwhelmed in the tide, and my infant perished. This was on St. Bridget's morn, near the strong Lyns of Campsie. May ill luck light upon the day." And the maiden answered, "It was on St. Bridget's morn, and twelve harvests before this time, that the fishermen of Campsie drew in their nets neither grilse nor salmon, but an infant, half-dead, who has since lived in misery, and must die, unless she is now aided." And the Lady answered, "Blessed be Saint Bridget and her morn! for these are the dark eyes and the falcon look of my slain lord; and thine shall be the inheritance of his widow." And she called for her attendants, and she bade them clothe that maiden in silk and in satin; and the pearls which they wove among her black tresses, were whiter than the frozen hail-drops.

REFLECTIONS ON FORTUNE.

(Inserted at the particular request of a Correspondent.)

Stern Fortune's frowns, I own, 'tis hard to bear,
Whilst the heart sinks beneath the weight of care;
Yet ev'n from thence advantage we may gain,
When calm reflection mitigates the pain;
When reason re-assumes her native seat,
And tells us some are wretched, who are great;
It quenches out ambition's restless fire,
Corrects the thought, and humbles the desire;
Shews us the trifling worth of what we view
With eager fondness, and with toil pursue—
That riches, pomp, nay, ev'n boundless pow'r,
May all be lost in one ill-fated hour;
Turns our pursuit from such delusive charms,
And with a nobler flame the bosom warms.
For what, alas! avail those transient toys,
In which misguided mortals place their joys?
Can they protract one hour our fleeting breath?
Or save us from the icy grasp of death?
Yet, 'tis a truth, we seldom seem to know,
Till we are taught it by experienc'd woe,
Misfortune, as it humbles, makes us wise,
Our judgment fathoms, and our virtues tries.
Happy are they, who, to their fate resign'd,
Can still possess tranquility of mind;
Can pomp and grandeur view with look serene,
Nor wish to act within the gaudy scene;
Their souls above such trifles nobly soar,
On them stern fortune loses half its power.
So the tough oak, fast-rooted in the ground,
While tempests rend the weaker trees around,
With head erect, the furious shock sustains,
Outlives the storm, and still unmov'd remains.

W.

Ornithology.—As a person was in the fields near Colwick, Nottingham, a few days ago, he made a curious discovery of four birds lying together, and with very appearance of having been dead a considerable time Their beautiful red plumage and uncommon appearance denoted that they were not natives of this island, and on taking them home, they proved to be Virginia nightingales. They have been stuffed, and have been inspected by many gentlemen and others. How they came into such a situation, all lying together is yet a mystery.

Chess.

On entering upon this subject, the editor wishes it to be distictly understood, that the checkmates and critical terminations of games, which he intends to introduce into this department, are not the results of his own experience, which is extremely limited in the science of Chess-playing. They are selected from the works of the best Chess-players, who ever wrote on the subject; and the only pretensions which the editor can make, is to the method or arrangement, in exhibiting the positions of the pieces, and of figuring the board, which he has no hesitation in pronouncing to be more simple than any other he has met with. It requires no greater ingenuity to comprehend it, than to read off a multiplication table; to which, indeed, it bears some affinity.

It will be requisite that each person who intends to practice these check-mates, &c. should have his Chess-board figured according to the plan here described, which he will soon discover to be a much more simple and natural arrangement, than that of numbering each square from 1 to 64, which is a very perplexed and awkward mode.

A series of check-mates, &c. on this principle, were published in the third and fourth volume of the *Liverpool Mercury*, and many of the readers of that journal had their Chess-boards numbered in the way recommended. To such persons, no further description will be necessary; but for the guidance of others, it may be requisite to give the following directions for numbering and reading off the board.

Of course, the board must be so placed, that the right-hand corner square be a white one. Then, supposing the pieces to be arranged on the board on their respective squares, their position will be designated as below:—

	WHITE.	BLACK.
King's Castle	1—1	1—8
—— Knight	2—1	2—8
—— Bishop	3—1	3—8
King	4—1	4—8
Queen	5—1	5—8
Queen's Bishop	6—1	6—8
—— Knight	7—1	7—8
—— Castle	8—1	8—8

PAWNS.

	WHITE.	BLACK.
King's Castle's Pawn	1—2	1—7
—— Knight's Pawn	2—2	2—7
—— Bishop's Pawn	3—2	3—7
King's Pawn	4—2	4—7
Queen's Pawn	5—2	5—7
Queen's Bishop's Pawn	6—2	6—7
—— Knight's Pawn	7—2	7—7
—— Castle's Pawn	8—2	8—7

It is hoped that the foregoing description, which may be considered by some persons to be tediously and unnecessarily minute, will be intelligible to all classes of readers, and prevent the necessity of any future explanation.

Having described the mode intended to be adopted for indicating the position of the pieces and reading off the games, the position of our series of Check-mates shall commence with one, which, from its ingenuity, has been termed

PHILIDOR'S LEGACY.

Although the annexed picture (as it may be called) of the position of the pieces is sufficiently intelligible to enable any person to set his Chess-board by it; yet we shall, in this one instance also, indicate the station of each piece by figures; as

WHITE.	BLACK.
King.....7—1	King.....1—8
Queen.....6—4	Castle.....8—8
Knight.....2—5	—— .....2—6
Pawn.....8—2	Pawn.....1—7
—— .....7—2	—— .....2—7
—— .....6—2	

The White moves, and gives Check-mate in the fourth move.

☞ In the games given in the Mercury, alluded to before, the solution of each was always given in the publication succeeding that in which it was proposed. In the *Kalcidoscope* it is intended to give the position of the game, and the mode of check-mating in the same publication, which will prevent the necessity of constantly referring to a previous number of the paper. The player will, of course, take some means of preventing the eye from glancing unawares over the solution, as that would defeat the object of these check-mates, which is to exercise his ingenuity and improve his acuteness.

SOLUTION TO PHILIDOR'S LEGACY.

When the sign + is affixed to any move, it signifies that check is given by that move

WHITE.	BLACK.
Knight....3—7+	King....2—8
Knight....1—6+	King....1—8
Queen....2—8+	Castle...2—8
Knight....3—7+	MATE.

M. Levillain, a mechanician of Rouen, has recently obtained a patent for the invention of a new machine, which he calls the *Hydraulic Hydra*. By the aid of this important machine, the inventor can create falls of water at his pleasure, and it will probably be adopted as a substitute for high pressure steam engines, an attempt to introduce which, has lately been made in France, though they have not proved so successful as was expected.

Fatal Duel.—Another victim has been immolated at the shrine of false honour. Mr. R. Leech, corn-merchant, of Ballina, Ireland, the father of seven young children, and the husband of a pregnant wife, fell in a duel with Mr. J. Anderson, jun. of that town, on Thursday week.

To Correspondents.

P. B. S. will find some reference to the subject of his inquiry, in the address published last Tuesday, on commencing the second volume.

L. must be aware that there is a gross impropriety in his paper on the subject of *Exquisites*, which necessarily precludes its publication. Of all the various modes of offending delicacy, there is none more exceptionable than the *double d'entendre*.

Claudius would oblige us by intimating whether his lines were original or copied:—not that they are at all less valuable in the latter case, but our modes of arranging poetry under distinct heads "Original," and "Selections," renders such information requisite.

We shall attend to F. A. S. L. and the Friend to whom we are indebted for the more enlarged version of the story of Eleanor Irving.

If upon a more careful perusal of the letter of P. N. we come to the conclusion that its insertion will not necessarily lead to a tedious and protracted discussion, we shall assign it a place in our next.

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